

**REMARKS**

Claims 1-37 are pending. Claims 1-37 stand rejected. Claims 17 and 20-37 are canceled without prejudice or a disclaimer. Claims 1, 10, and 16 are independent claims.

An authorization is hereby given to charge Deposit Account No. \_\_\_\_\_ for any underpayment.

Claims 1, 10 and 16 stand rejected under 35 U.S.C. §102(b), as allegedly being anticipated by Fajardo *et al.* (U.S. 6,445,862)

Claims 1, 10, and 16 recite a photonic crystal fiber preform, where the “distribution of index of refraction of the photonic crystal fiber preform **IS changed by change of said arrangement of the members.**”

According to the United States Court of Appeals for the Federal Circuit, a claim is anticipated only if a single prior art reference **sets forth each and every feature** recited in a claim (*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)), **including the feature in functional language** (*In re Schreiber*, 128 F.3d 1473, 1478, 44 USPQ.2d 1429 (Fed. Cir. 1997) (holding that even if the claimed device is recited in purely functional language, the device is patentable if the prior art is incapable of performing the same function)).

The Applicant respectfully submits that the present claims 1, 10, and 16, recite the feature related to the distribution index **structurally, defining the photonic crystal fiber preform recited in each claim by the STATE of the refractive index distribution** (*Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2s 1525, 1528 (Fed. Cir. 1990); see also *Phillips v. AWH Corp.*, 415 F.3d 1303, 1311, 75 USPQ2d 1321 (Fed. Cir. 2005) (construing some of the terms as structural even though the terms may have functional connotation)).

Fajardo, as read by the Applicant, discloses a photonic crystal fiber comprising a core region 44, a plurality of air columns 52, and a plurality of periodic lattice columns 56 (FIG. 4). According to Fajardo, the air column 52 may be formed from a solid material having low refractive index (id. at line 28-30). In addition, Fajardo indicates that all of the air or solid columns 52 to “contact the outer circumference of the column structure forming the core region 44” (id., at line 30-32; see also FIG. 4 and 5), whereas the periodic lattice columns 56 do not (FIG. 4 and 5).

The Applicant respectfully submits that if the air or solid columns 52 were to maintain contact with the core region 44, the arrangement of the air or solid columns 52 cannot be changed with the periodic lattice columns 56. Otherwise, the change in the arrangements results in the air or solid columns 52 NOT in contact with the core region 44 and the periodic lattice columns 56 in contact with the core region 44, the arrangement that directly undermines the teachings of Fajardo.

As such, any change in the arrangement of columns of Fajardo, at best, is limited to change involving the columns of the same type. In particular, (1) any change in arrangement of one or more air columns 52 is limited to the change in arrangement with one or more different air columns 52; (2) any change in arrangement of one or more solid columns 52 is limited to change in arrangement with one or more different solid columns 52; and (3) any change in arrangement of one or more periodic lattice columns 56 is limited to change in the arrangement with one or more different periodic lattice columns 56.

If the change in the arrangement is limited to that of the same types of columns having identical refractive index, the distribution of the refractive index of the preform is not changed with the change in the arrangement of the columns. In other words, as Fajardo requires the air or

solid columns 52 to contact the core region, the photonic crystal fiber disclosed in Fajardo has ONE AND ONLY ONE refractive index distribution.

As such, Fajardo, at best, fails to set forth or anticipate a photonic crystal fiber preform where the “distribution of index of refraction of the photonic crystal fiber preform is changed by change of said arrangement of the members,” as recited in claims 1, 10, and 16. At worst, Fajardo teaches away from the photonic crystal fiber preform recited in claims 1, 10, and 16. The Applicant, therefore, respectfully requests withdrawal of the rejections on each claim.

The Applicant respectfully submits that the photonic crystal fiber preform of claims 1, 10, and 16 are patentable over Fajardo on an additional ground.

In particular, Fajardo discloses that its photonic crystal fiber comprising a core region 44, a plurality of air or solid columns 52 constituting a moat region 50, and a plurality of periodic lattice columns 56 and background matrix 48 constituting a cladding region 42 (FIG. 4).

The present invention, however, does not limit the core region and the cladding region such that the size of the core region varies according to the distribution of index of refraction of materials inserted into the holes.

As such, the photonic crystal fiber preform of claims 1, 10, and 16 are patentable over Fajardo, and Fajardo does not anticipate the photonic crystal fiber preform of claims 1, 10, and 16 are patentable over Fajardo. The Applicant respectfully requests withdrawal of the rejection.


Other claims in this application are each dependent on the independent claims 1, 10, and 16 and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

Amendment  
Serial No. 10/754,027

Should the Examiner deem that there are any issues which may be best resolved by telephone,  
please contact Applicant's undersigned representative at the number listed below.

Respectfully submitted,

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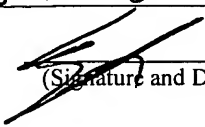
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